

JÖRG BRAKEMANN, citizen of Germany, whose residence and post office addresses are Museumsplatz 7, 32257 Bünde, Germany, has invented certain new and useful improvements in a

FORMED BODY

of which the following is a complete specification:

FORMED BODY

CROSS-REFERENCES TO RELATED APPLICATIONS

[0001] This application claims the priority of European Patent Application Serial No. 00 102 353.0, filed February 3, 2000, the subject matter of which is incorporated herein by reference.

BACKGROUND OF THE INVENTION

[0002] The present invention relates, in general, to a formed body, and more particularly to a tubular formed body made from several layers of rolled-up lined corrugated cardboard.

[0003] German utility model 298 13 984 describes a formed body of this type which is fairly stable under stress so that its field of use is wide spread. However, this conventional formed body cannot be fabricated in a rational and economical manner because in order to realize a coherent structure and sufficient stabilization, the individual layers that form the walls of the finished product must be glued together. In addition, the corrugated cardboard for making the formed body has to be wound around a core. As a consequence, the cardboard can be lined on one side only because otherwise a great force must be applied for rolling up the layers, in particular when a rectangular or square

cross section of the formed body is desired. By using corrugated cardboard that is lined on only one side has, a sufficient stability under stress can, however, be achieved only when establishing a great number of layers of corrugated cardboard.

[0004] It would therefore be desirable and advantageous to provide an improved formed body that obviates prior art shortcomings and can be made in a simpler and more cost-efficient manner while yet displaying an improved stability under stress.

SUMMARY OF THE INVENTION

[0005] The present invention provides for a tubular formed body defining a longitudinal axis and made of several layers of rolled-up lined corrugated cardboard having flutes extending in a direction of the longitudinal axis, wherein at least some of adjoining one of the layers are securely connected to one another through a positive engagement.

[0006] A formed body according to the present invention can be made in a significantly simpler manner as there is no need for gluing the layers, and a number of blanks can be fabricated in a single operation for subsequent rolling operation to provide the formed body of the present invention with full functionality. Only the last layer needs to be secured, e.g. through gluing, to a

subjacent layer.

[0007] According to another feature of the present invention, the positive engagement of adjoining layers may be implemented through punching of tongues for fit in complementary openings, whereby the tongues engage in the openings during roll-up operation. Suitably, the engagement of the tongues in the complementary openings is realized under a certain frictional fit to thereby ensure a sufficient securement of the layers relative to one another.

[0008] Suitably, the layers have an inner side provided with a score line extending in a direction of the flutes. Thus, the sections of the blank, establishing the layers of the finished product, are provided in the predetermined folding area with a weak material zone so that a formed body of polygonal or square configuration can be fabricated through simple bending during roll-up operation. As a result, the use of corrugated cardboard lined on both sides is possible so that the stability of the finished product can be so enhanced, in particular when absorbing stress under axial pressure, as to be able to carry greater loads or to reduce the wall strength of the formed body, resulting in a reduced need for material.

[0009] A formed body according to the present invention can be fabricated in an extremely rational and economic manner, also because a number of blanks can be made simultaneously in a single operation by an punching machine. It is

easily possible to punch out up to ten blanks from a single slab of corrugated cardboard for subsequent fabrication of formed bodies according to the present invention.

[0010] Formed bodies according to the present invention may be useable as feet for pallets.

[0011] The blanks of the slab of corrugated cardboard are initially still interconnected. However, the connection zone between successive blanks is so configured as to allow easy separation of single blanks. By fabrication in this manner, there is the advantage that the blanks retain initially their flat character and thus can be stacked as plates while still being interconnected.

BRIEF DESCRIPTION OF THE DRAWING

[0012] Other features and advantages of the present invention will be more readily apparent upon reading the following description of a preferred exemplified embodiment of the invention with reference to the accompanying drawing, in which:

[0013] FIG. 1 is a top and side perspective illustration of a semi-finished formed body according to the present invention; and

[0014] FIG. 2 is a top and side perspective illustration of a finished formed body according to the present invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0015] Throughout all the Figures, same or corresponding elements are generally indicated by same reference numerals.

[0016] Turning now to the drawing, and in particular to FIG. 1, there is shown a top and side perspective illustration of a semi-finished tubular formed body according to the present invention, which is fabricated from a blank 1 made of corrugated cardboard that can be lined on both sides. The blank 1 has a strip-shaped configuration and is subdivided in a series of successive sections which form layers 2 of a multi-layer formed body after rolling up the blank 1, as shown in FIG. 2. The layers 2 are separated from one another by score lines 5 of a length that is so selected that a substantially play-free support of single layers 2 is realized when rolling up the blank 1. The score lines 5 extend across the longitudinal extension of the blank 1 in parallel relationship to the flutes of the corrugated cardboard and define a weak material zone to realize easy folding of the blank 1 during the rolling operation.

[0017] Punched in the area of the score lines 5 are complementary tongues 3 and openings 4 which engage during rolling operation, thereby

establishing a positive joint. The tongues 3 and the openings 4 are so dimensioned as to realize a friction engagement when fitted together so as to secure the individual layers 2 relative to one another.

[0018] Suitably, the layers 2 that form the outside of the formed body are devoid of tongues 3 and openings 4 so as to implement a substantially closed outer surface area. Suitably, the last one of the layers 2, which forms an outer side, is glued to the subjacent one of the layers 2 so that the finished formed body, as shown in FIG. 2, displays a solid structure in conjunction with the tongue 3 and opening 4.

[0019] While the invention has been illustrated and described as embodied in a formed body, it is not intended to be limited to the details shown since various modifications and structural changes may be made without departing in any way from the spirit of the present invention.

[0020] What is claimed as new and desired to be protected by Letters Patent is set forth in the appended claims: